Exponential Skittles

Activity Description:
Student should be in groups. Give each group several skittles and a cup along with their worksheet. Have them put two skittles in the cup and record this in the table on the worksheet under 0. They should consider this as two frogs happily living in the local pond. They should then shake the cup and pour the candy onto a desk. For every one with the "s" showing, the students should add in another skittle and record the new population. They should continue this process and fill in the table. They should then enter the data into the lists and do exponential regression as before while they answer the questions on the worksheet. Each group should share their equation with the class. (Note: This experiment could be varied by changing the beginning population from 2 to another number. Keep in mind however that it's about exponential growth, so don't start out too big!)

Ways This Experiment Could Apply to Different Math Classes

Algebra 1

- Students can use this to practice plotting data.

- They could explore population modeling.

- This can lead to a discussion of exponential models and writing equations to fit data.

- It explores Exponential Regression on the TI-83 Plus calculator.

- The population can be varied by changing the initial population and what effect this has.

Pre-Calculus

- This activity can be extended so that students convert the exponential regression equation to use e and ln.

- Students can work with the change of base formula and properties of ln.

- This could be extended so that students could use their new equations to answer questions about future populations.

Calculus

- This could be used as a lead-in to studying rates of change.

- Students could explore rate of change at a particular time by taking derivatives.

Statistics

- Students could explore the probability of getting a certain number of skittles with the "s" up.

- Students could explore the chances of getting a certain color of skittle with the "s" up, etc.